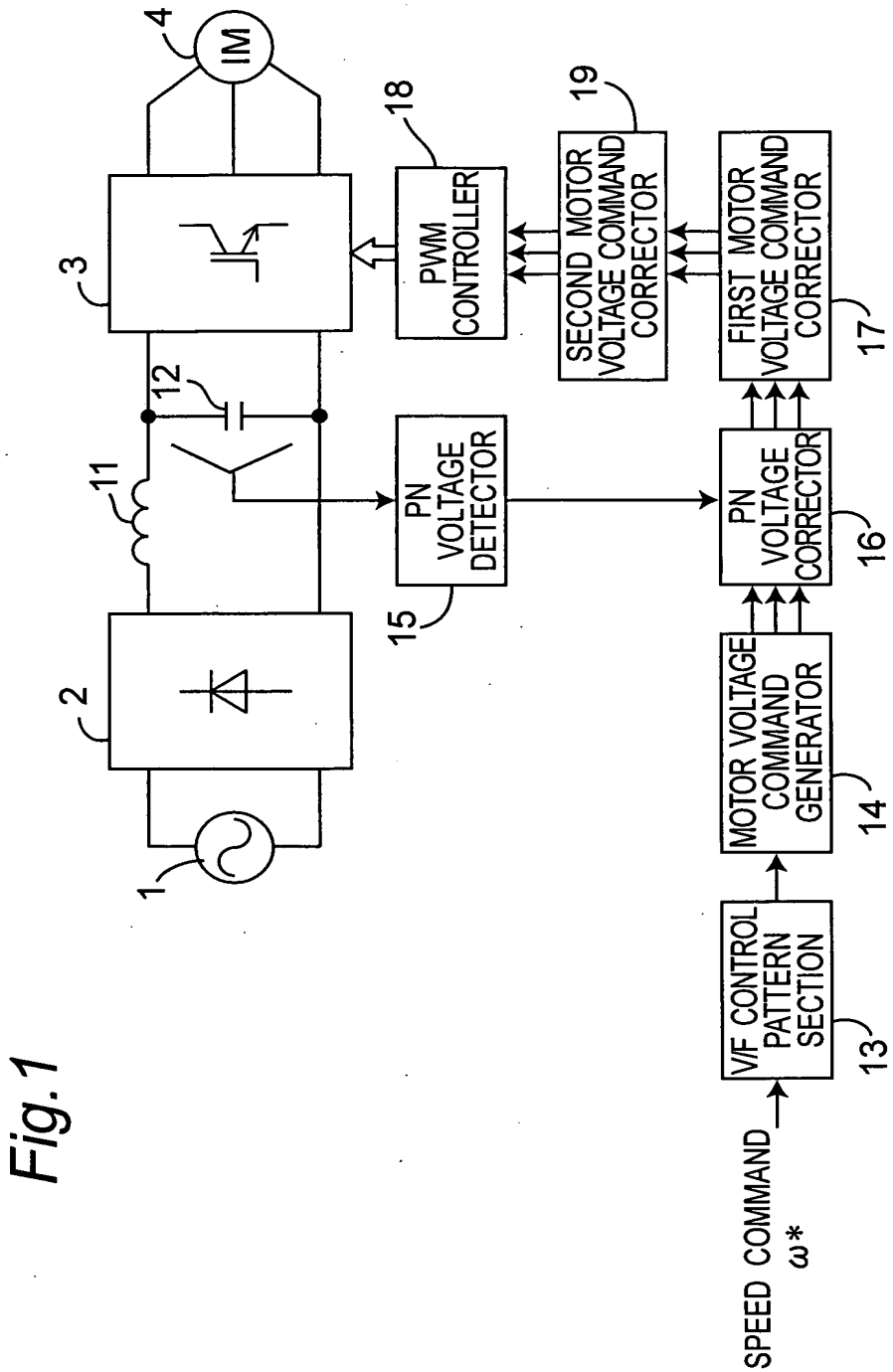

Fig.1

Fig.2

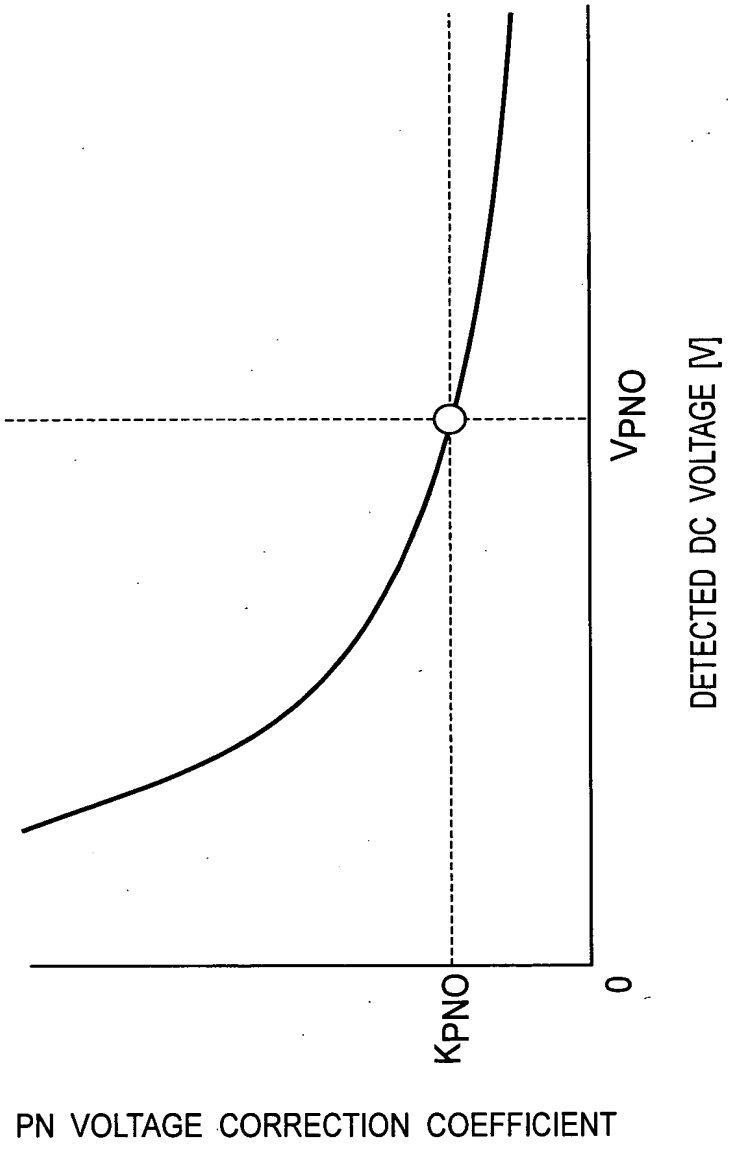
VPNO
DETECTED DC VOLTAGE [V]
KPNO
0
PN VOLTAGE CORRECTION COEFFICIENT

Fig.3A

DETECTED DC VOLTAGE	
Vpn	240V

FIRST CORRECTED MOTOR VOLTAGE COMMAND	
V_{uh1}^*	200V
V_{vh1}^*	90V
V_{wh1}^*	0V

→

SECOND CORRECTED MOTOR VOLTAGE COMMAND	
V_{uh2}^*	200V
V_{vh2}^*	90V
V_{wh2}^*	0V

Fig.3B

DETECTED DC VOLTAGE	
Vpn	240V

FIRST CORRECTED MOTOR VOLTAGE COMMAND	
V_{uh1}^*	300V
V_{vh1}^*	180V
V_{wh1}^*	0V

→

SECOND CORRECTED MOTOR VOLTAGE COMMAND	
V_{uh2}^*	200V
V_{vh2}^*	144V
V_{wh2}^*	0V

Fig.4

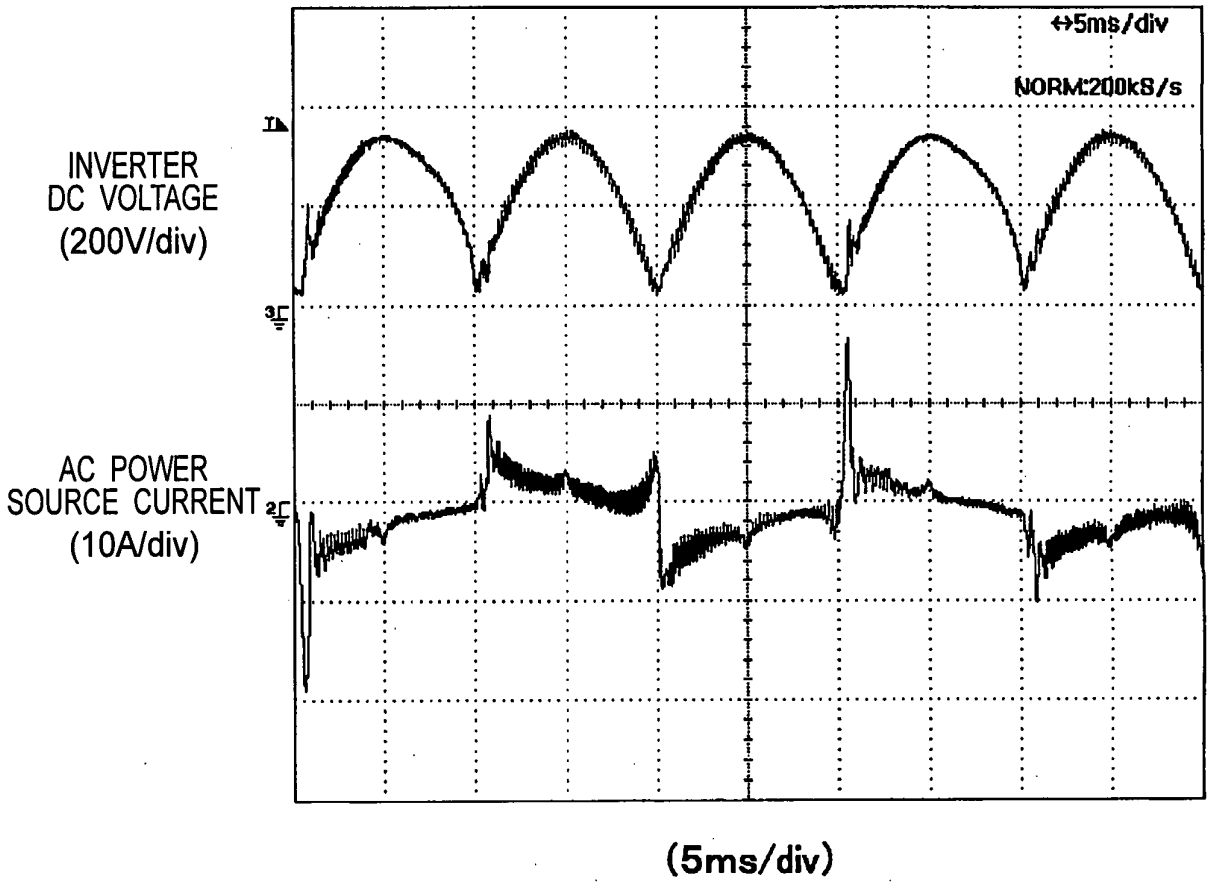
↔5ms/div
NORM:200kS/s
INVERTER
DC VOLTAGE
(200V/div)
AC POWER
SOURCE CURRENT
(10A/div)
(5ms/div)

Fig.5

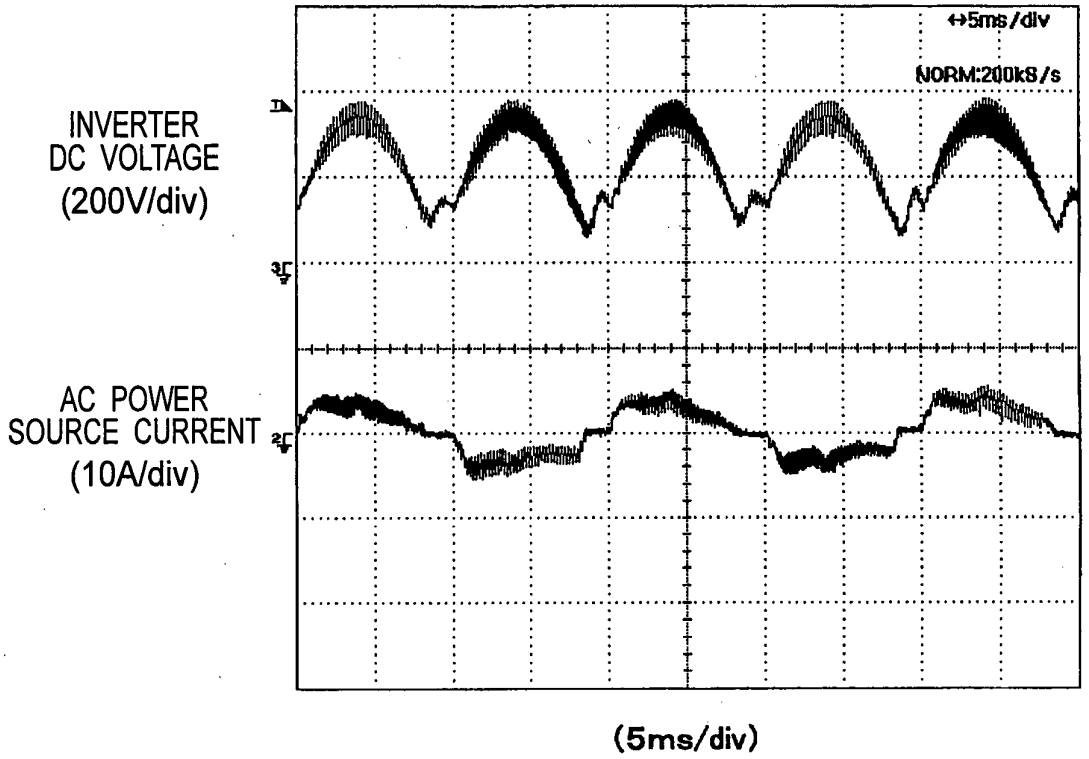
↔5ms/div
NORM:200kS/s
INVERTER
DC VOLTAGE
(200V/div)
AC POWER
SOURCE CURRENT
(10A/div)
(5ms/div)

Fig.6

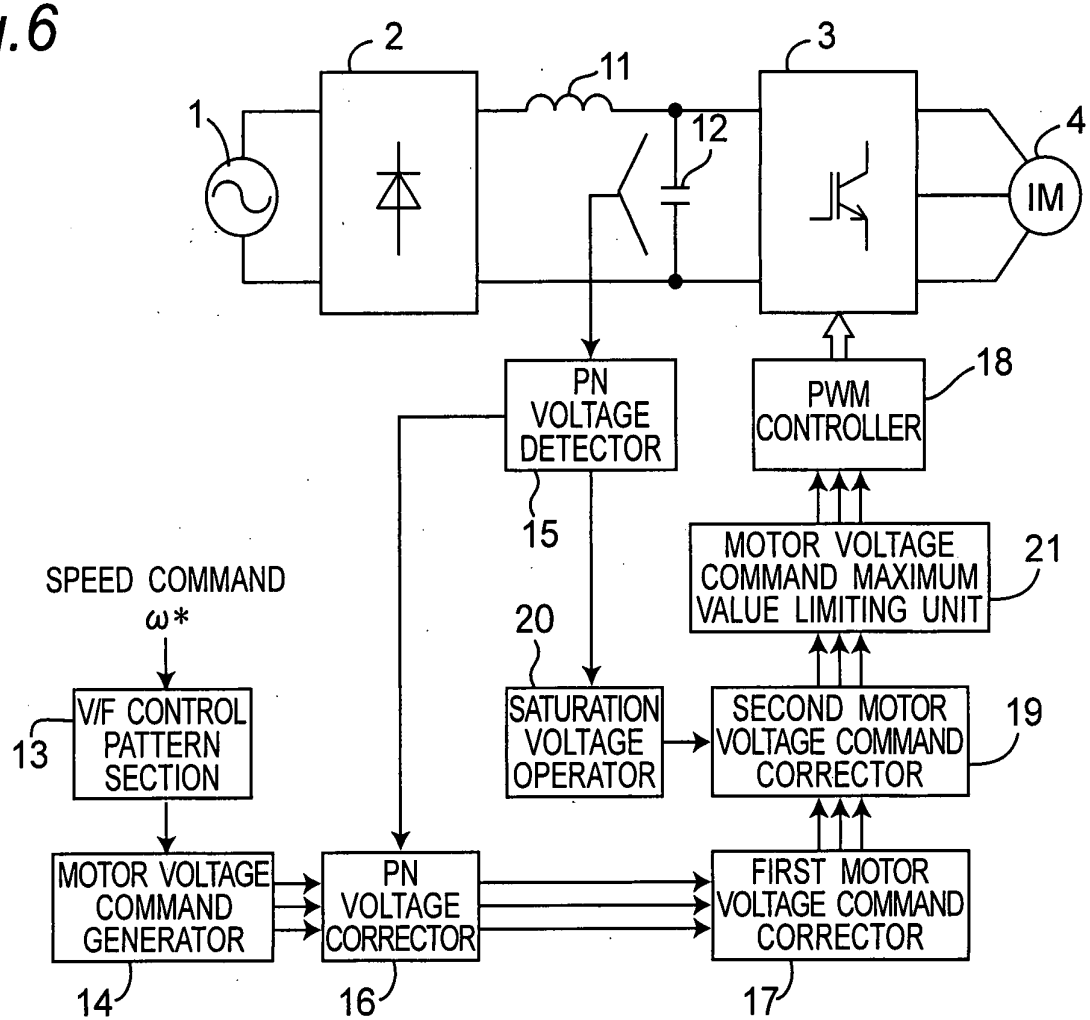
1
2
3
4
11
12
IM
PN VOLTAGE DETECTOR
15
PWM CONTROLLER
18
MOTOR VOLTAGE COMMAND MAXIMUM VALUE LIMITING UNIT
21
SPEED COMMAND
ω*
20
V/F CONTROL PATTERN SECTION
13
SATURATION VOLTAGE OPERATOR
SECOND MOTOR VOLTAGE COMMAND CORRECTOR
19
MOTOR VOLTAGE COMMAND GENERATOR
PN VOLTAGE CORRECTOR
FIRST MOTOR VOLTAGE COMMAND CORRECTOR
14
16
17

Fig.7A

DETECTED DC VOLTAGE	
Vpn	240V

SPEED COMMAND	
K	1.2

FIRST CORRECTED MOTOR VOLTAGE COMMAND	
V_{uh1}^*	200V
V_{vh1}^*	90V
V_{wh1}^*	0V

→

SECOND CORRECTED MOTOR VOLTAGE COMMAND	
V_{uh2}^*	200V
V_{vh2}^*	90V
V_{wh2}^*	0V

→

THIRD CORRECTED MOTOR VOLTAGE COMMAND	
V_{uh3}^*	200V
V_{vh3}^*	90V
V_{wh3}^*	0V

Fig.7B

DETECTED DC VOLTAGE	
Vpn	240V

SPEED COMMAND	
K	1.2

FIRST CORRECTED MOTOR VOLTAGE COMMAND	
V_{uh1}^*	300V
V_{vh1}^*	180V
V_{wh1}^*	0V

→

SECOND CORRECTED MOTOR VOLTAGE COMMAND	
V_{uh2}^*	288V
V_{vh2}^*	172.8V
V_{wh2}^*	0V

→

THIRD CORRECTED MOTOR VOLTAGE COMMAND	
V_{uh3}^*	240V
V_{vh3}^*	172.8V
V_{wh3}^*	0V

Fig.8

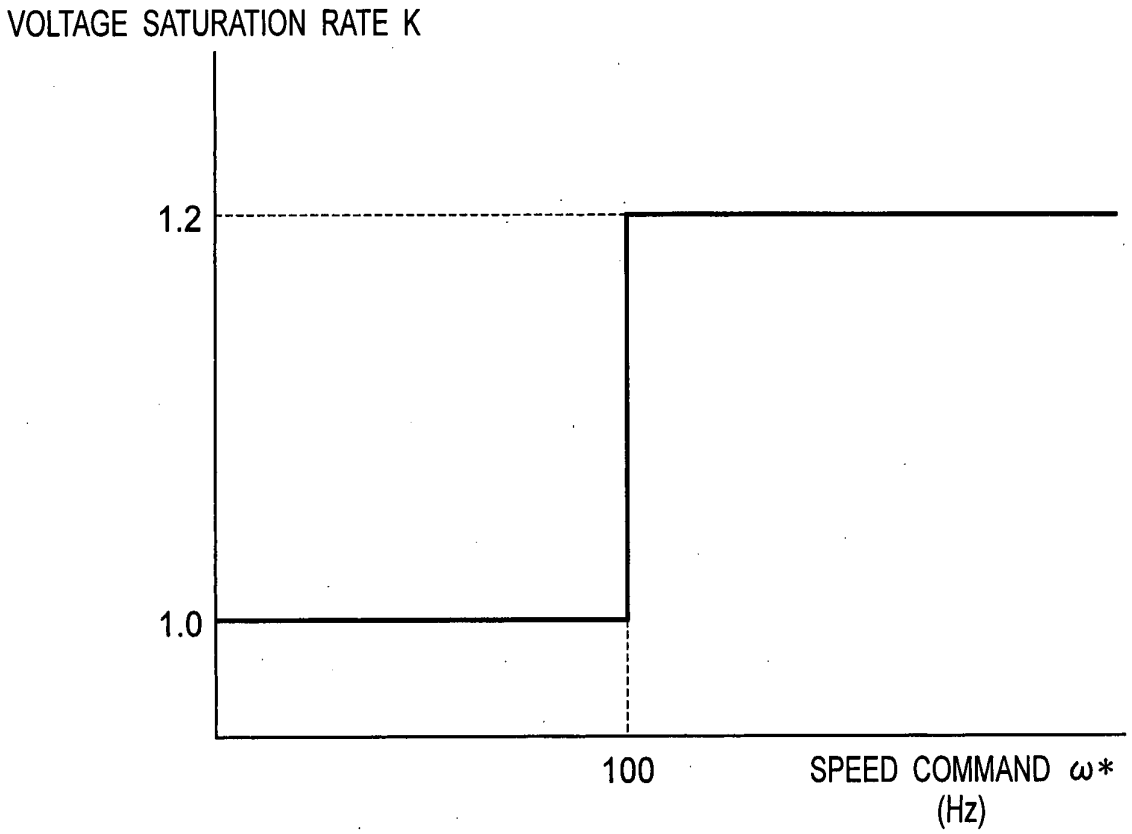

Fig.9

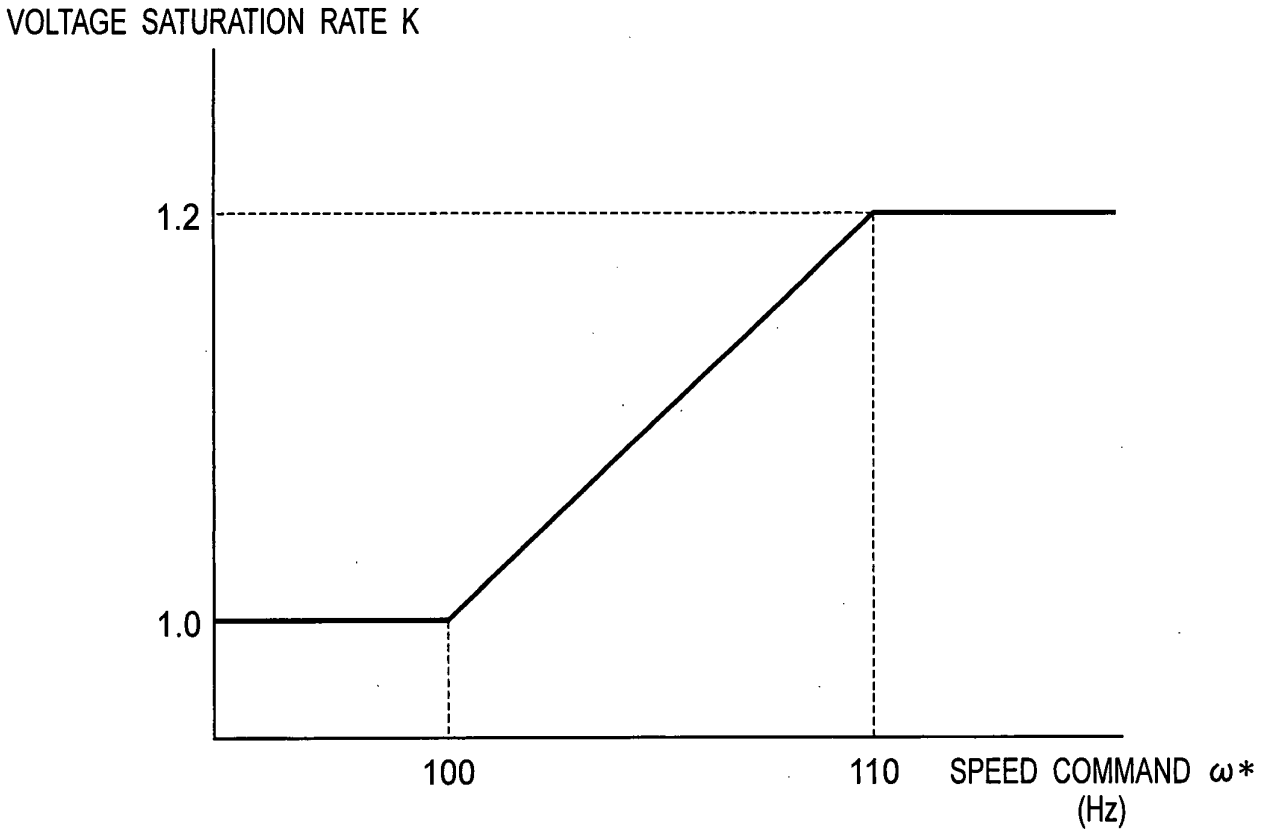

Fig.10

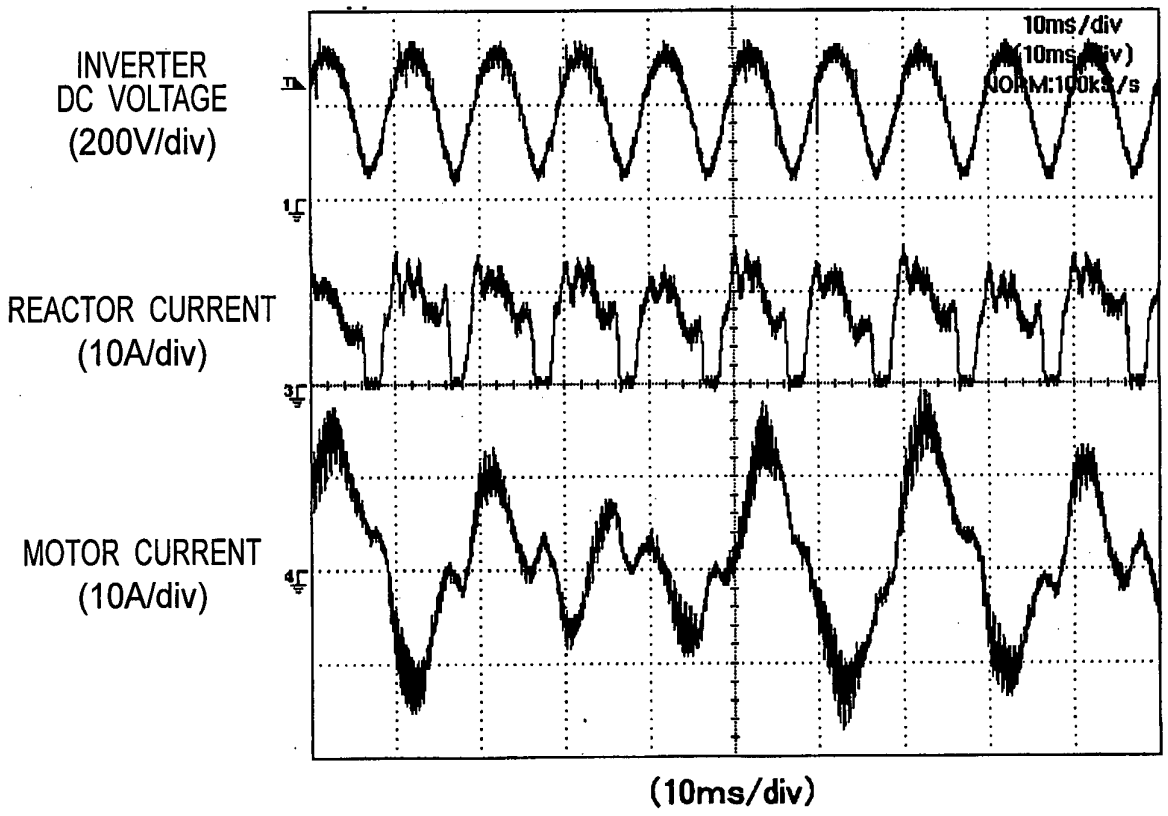
INVERTER
DC VOLTAGE
(200V/div)
REACTOR CURRENT
(10A/div)
MOTOR CURRENT
(10A/div)
10ms/div
(10ms/div)
(10ms/div)

Fig.11

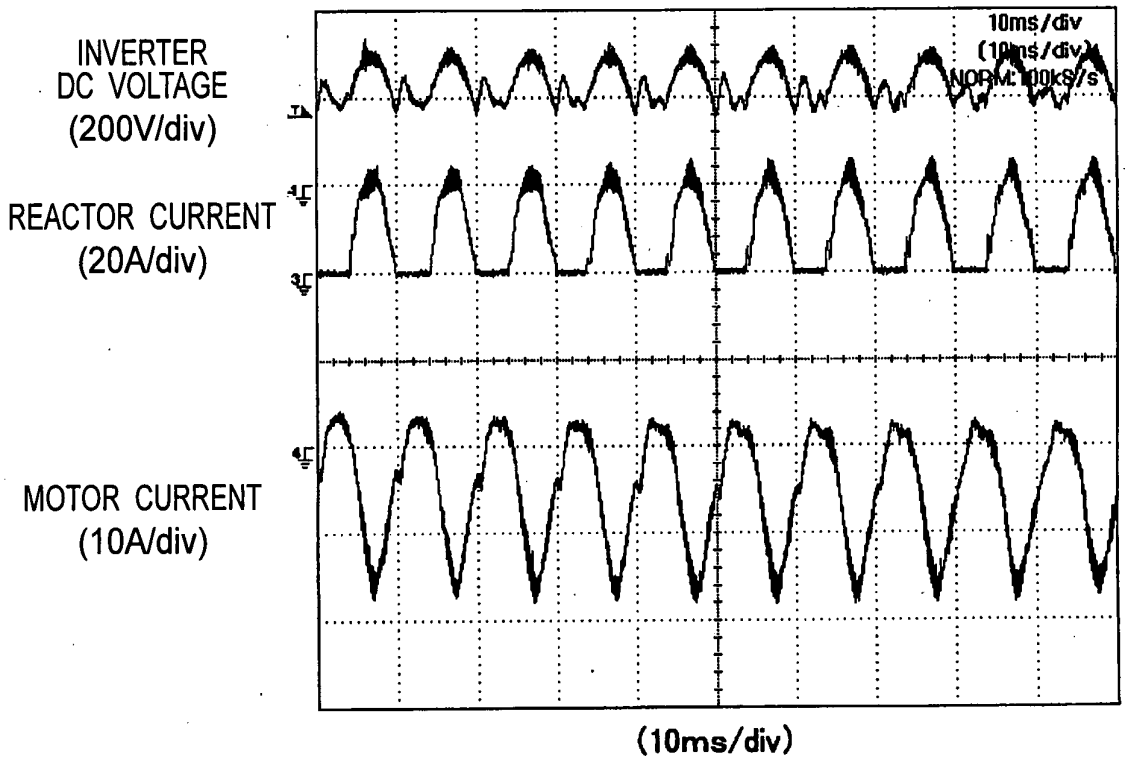
INVERTER
DC VOLTAGE
(200V/div)
REACTOR CURRENT
(20A/div)
MOTOR CURRENT
(10A/div)
10ms/div
(10ms/div)
(10ms/div)

Fig.12

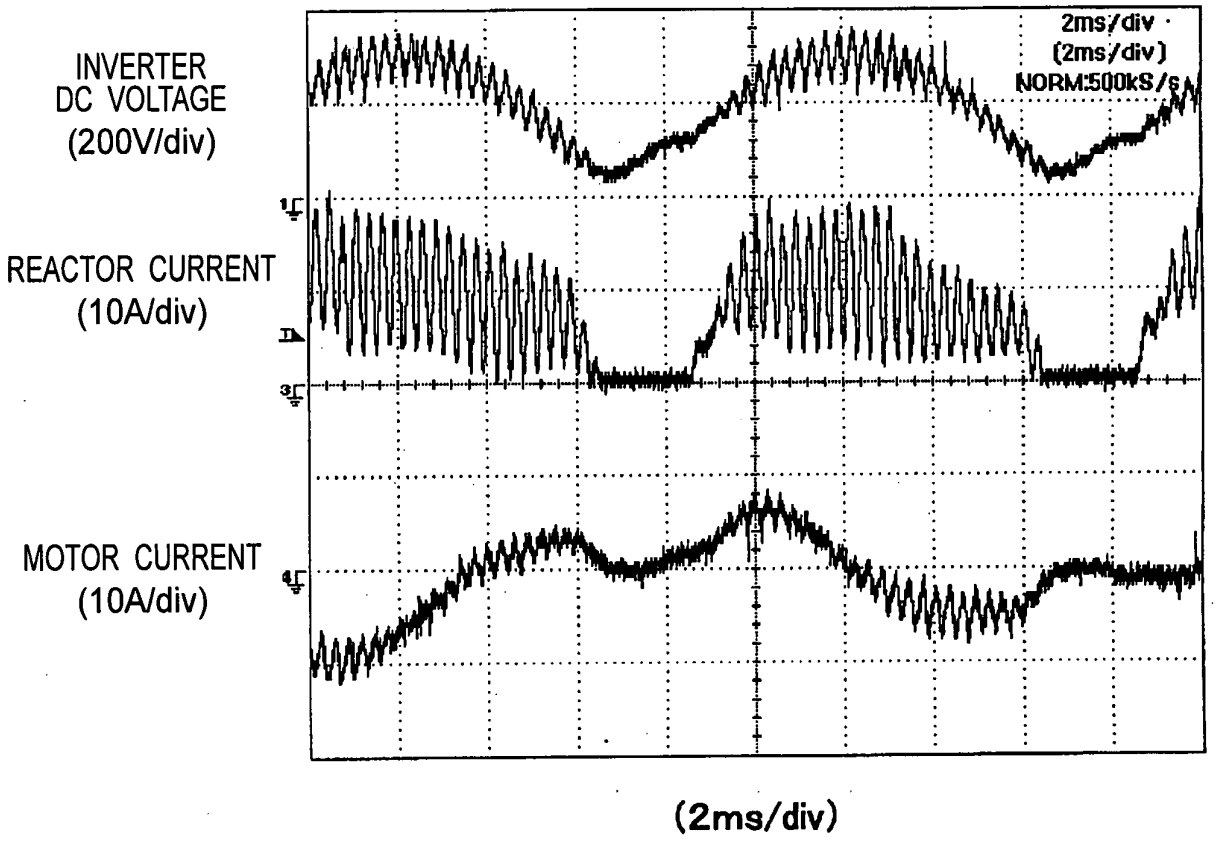
INVERTER
DC VOLTAGE
(200V/div)
REACTOR CURRENT
(10A/div)
MOTOR CURRENT
(10A/div)
2ms/div
(2ms/div)
NORM:500kS/s
(2ms/div)

Fig.13

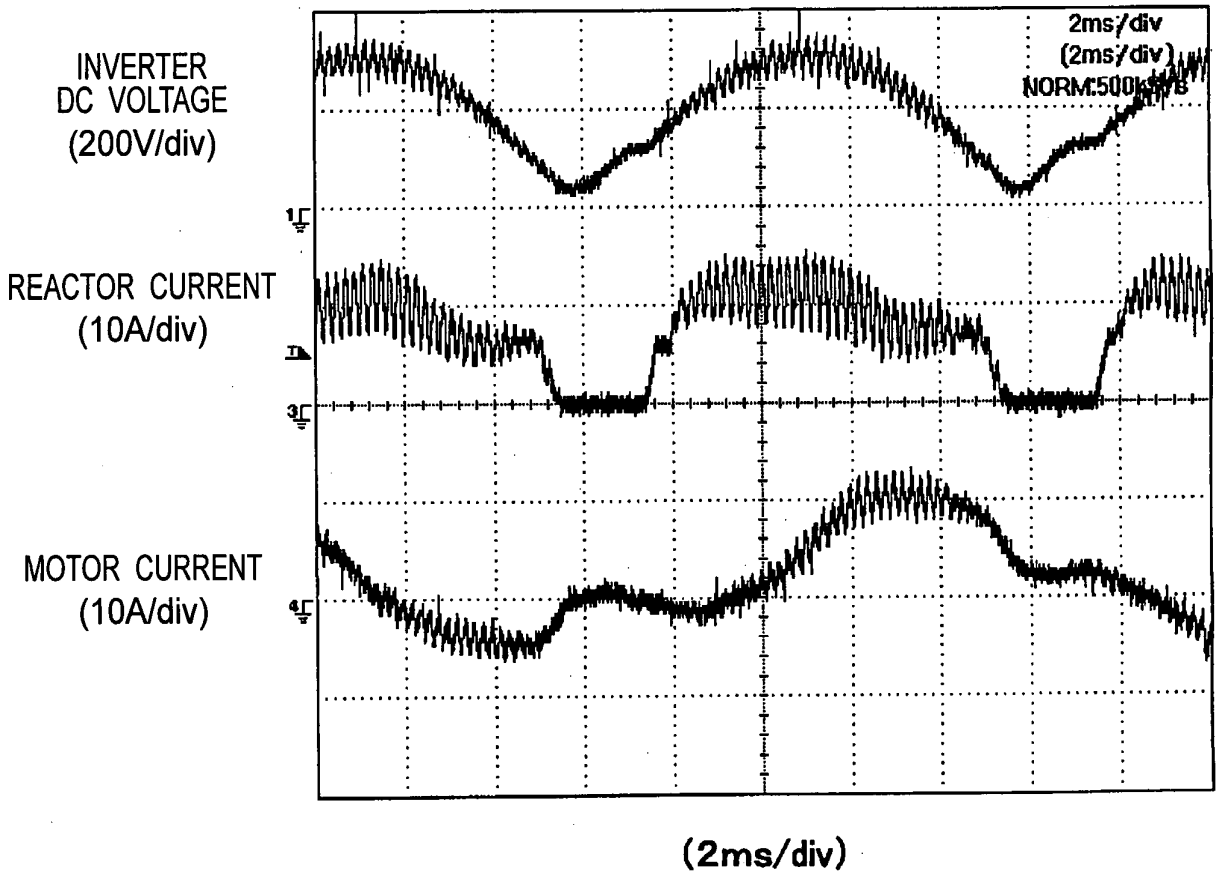
INVERTER
DC VOLTAGE
(200V/div)
REACTOR CURRENT
(10A/div)
MOTOR CURRENT
(10A/div)
2ms/div
(2ms/div)
(2ms/div)

Fig.14

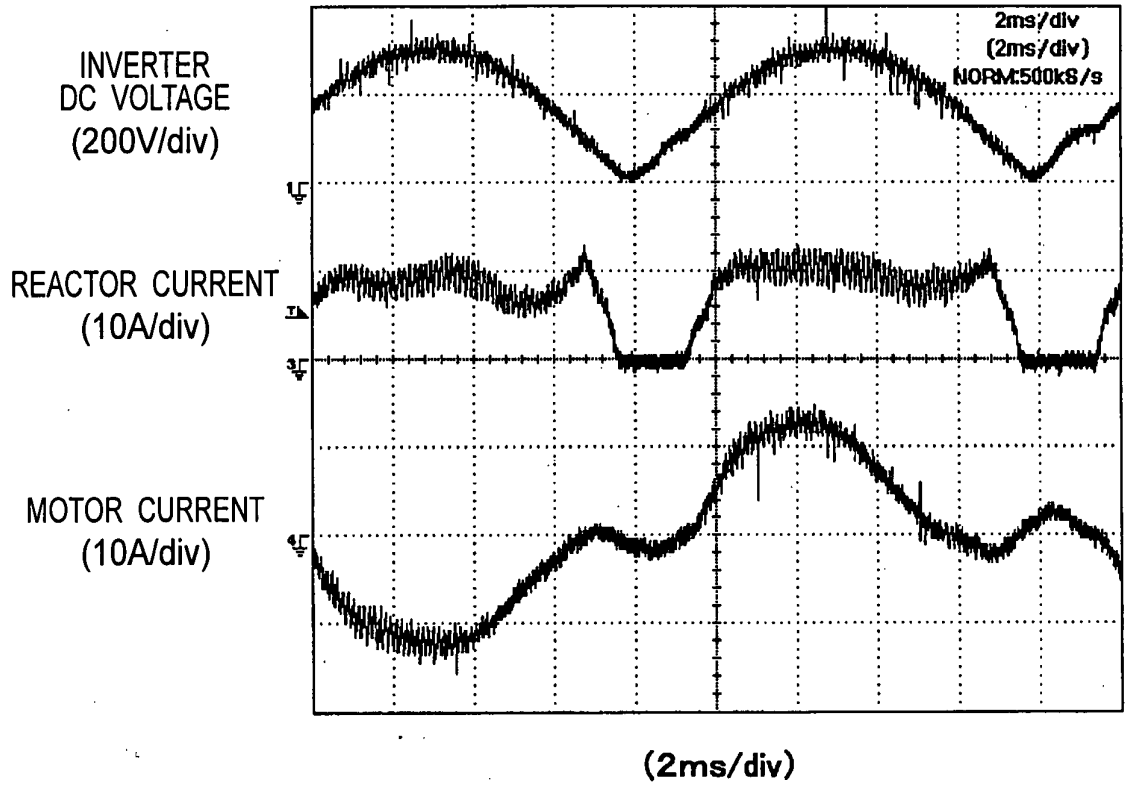
INVERTER
DC VOLTAGE
(200V/div)
REACTOR CURRENT
(10A/div)
MOTOR CURRENT
(10A/div)
2ms/div
(2ms/div)
NORM:500kS/s
(2ms/div)

Fig.15

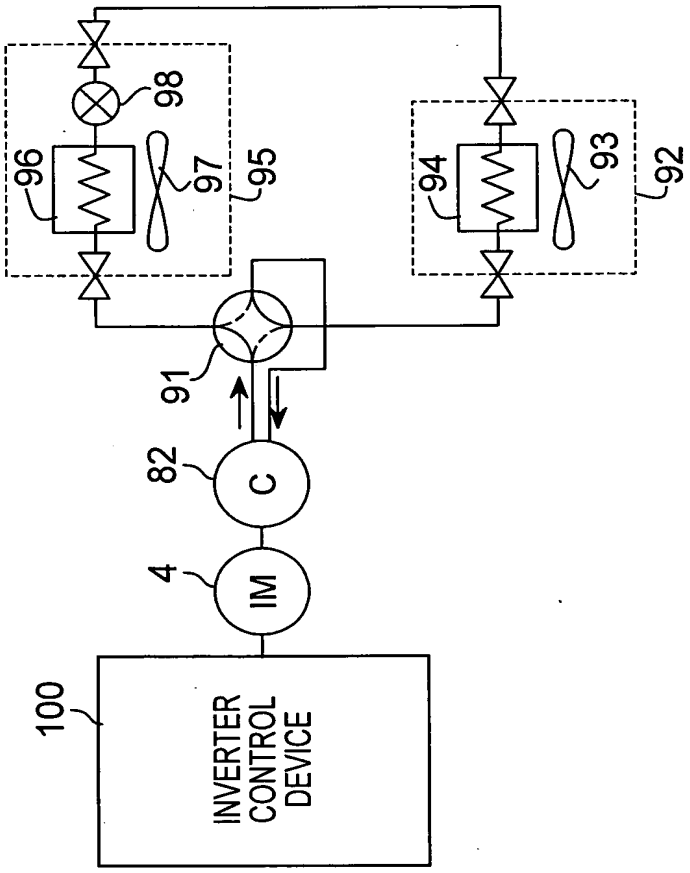

Fig.16

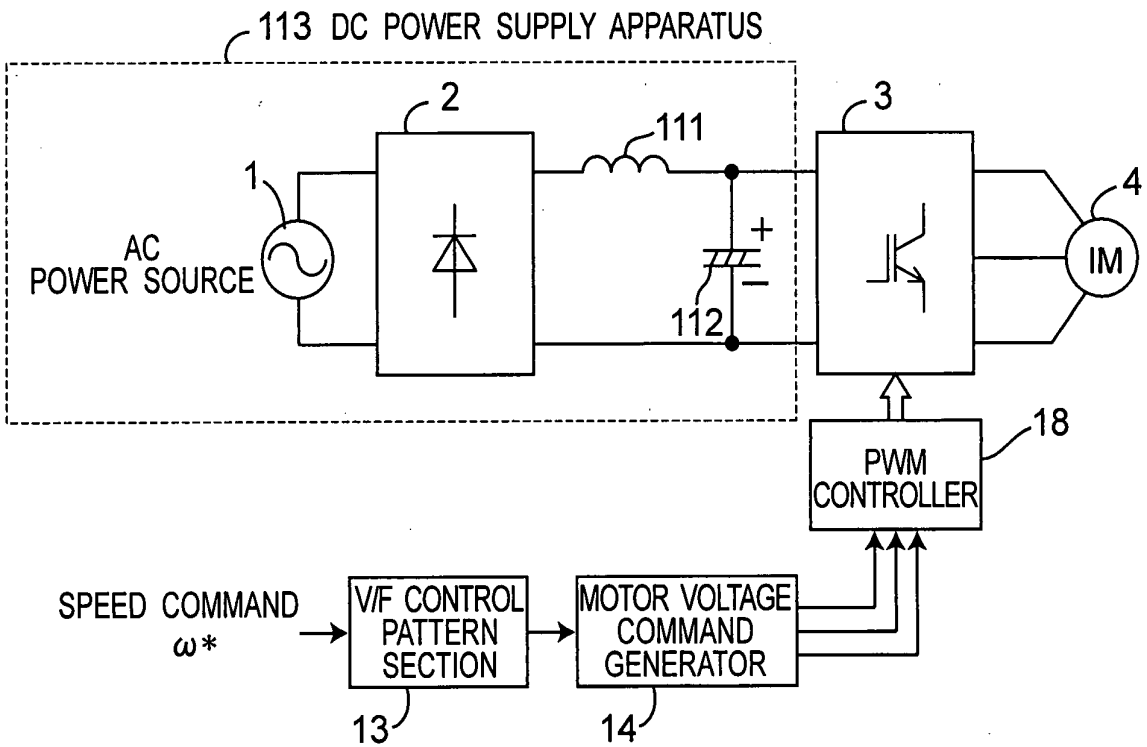
113 DC POWER SUPPLY APPARATUS
2
111
3
1
4
AC
POWER SOURCE
+
IM
112
18
PWM
CONTROLLER
SPEED COMMAND
ω*
V/F CONTROL
PATTERN
SECTION
MOTOR VOLTAGE
COMMAND
GENERATOR
13
14

Fig.17

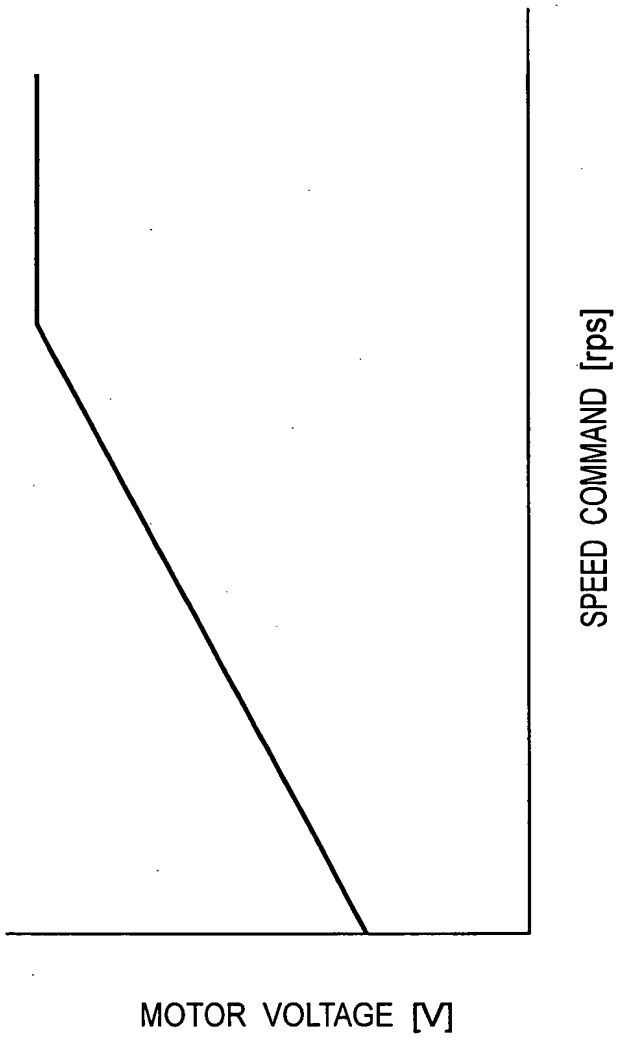

Fig.18

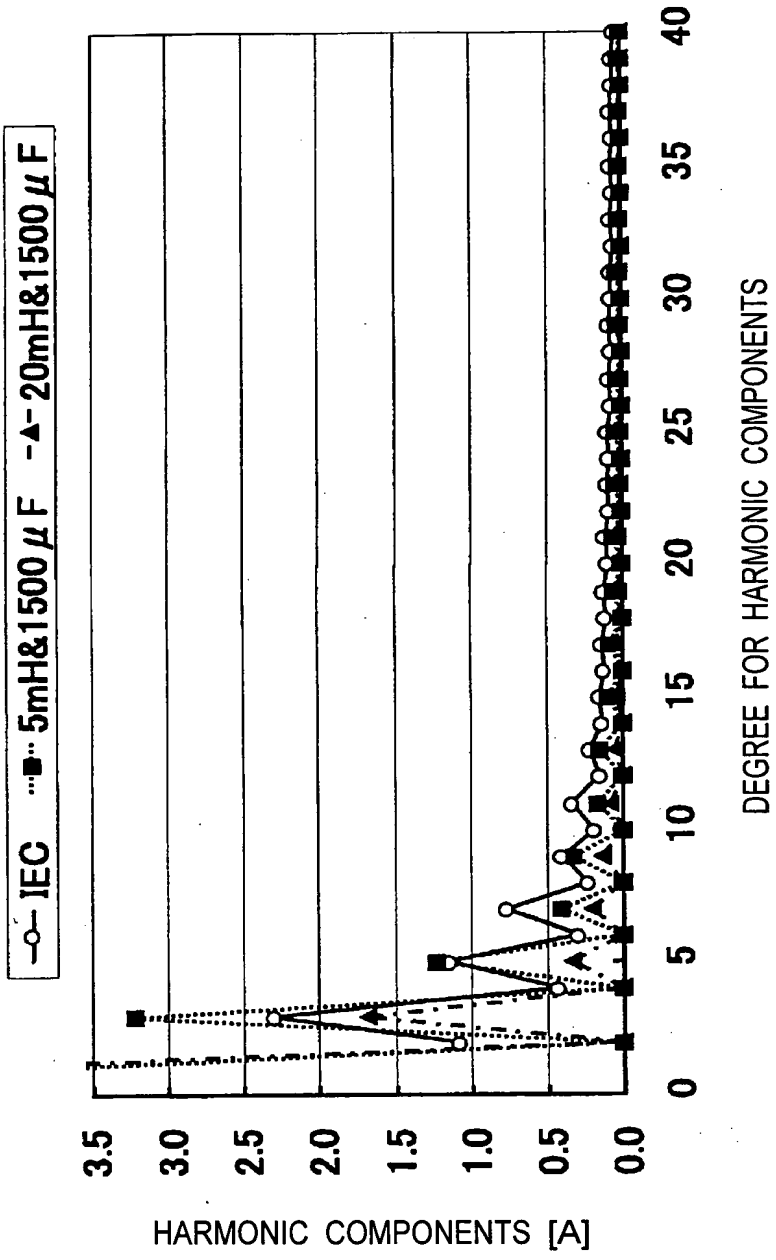
IEC
5mH&1500μF
20mH&1500μF
HARMONIC COMPONENTS [A]
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
5
10
15
20
25
30
35
40
DEGREE FOR HARMONIC COMPONENTS

Fig.19